Ordering number: EN2677C

Monolithic Linear IC

LA4700N

2-Channel 12W AF Power Amplifier for Car Stereos

Functions

- Standby switch function built in
- Pop noise suppressor built in
- Thermal shutdown circuit built in
- Overvoltage/surge protector built in
- Output pin-to-GND short protector built in
- Output pin-to-V_{CC} short protector built in
- Load short protector built in

Features

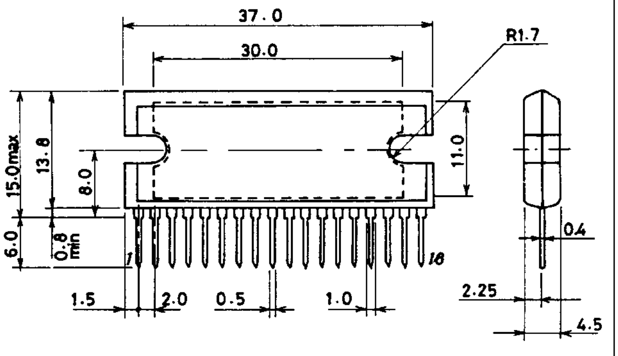
- Low pop noise at the time of power supply ON/OFF
- Excellent oscillation stability

Package Dimensions

unit : mm

3109-SIP18H

[LA4700N]



SANYO : SIP18H

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max1	Quiescent t = 30 s	26	V
	V_{CC} max2	Quiescent	18	V
	V_{CC} max3	Operating	16	V
Surge supply voltage	V_{CC} surge	t = 200 ms rise time 1 ms	50	V
Maximum output current	Io peak	Per channel	4	A
Allowable power dissipation	Pd max	*Note	37.5	W
Operating temperature	Topr		–30 to +75	°C
Storage temperature	Tstg		–40 to +150	°C

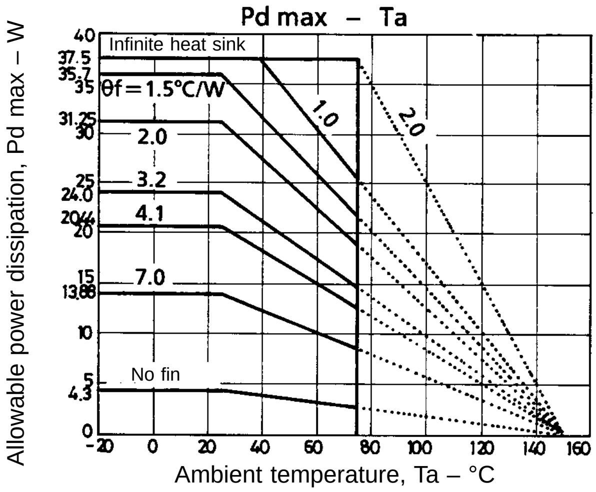
Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended operating voltage	V_{CC}		13.2	V
Operating voltage range	V_{CC} op		10 to 16	V
Recommended load resistance	R_L	BTL/2ch	4 to 8	Ω

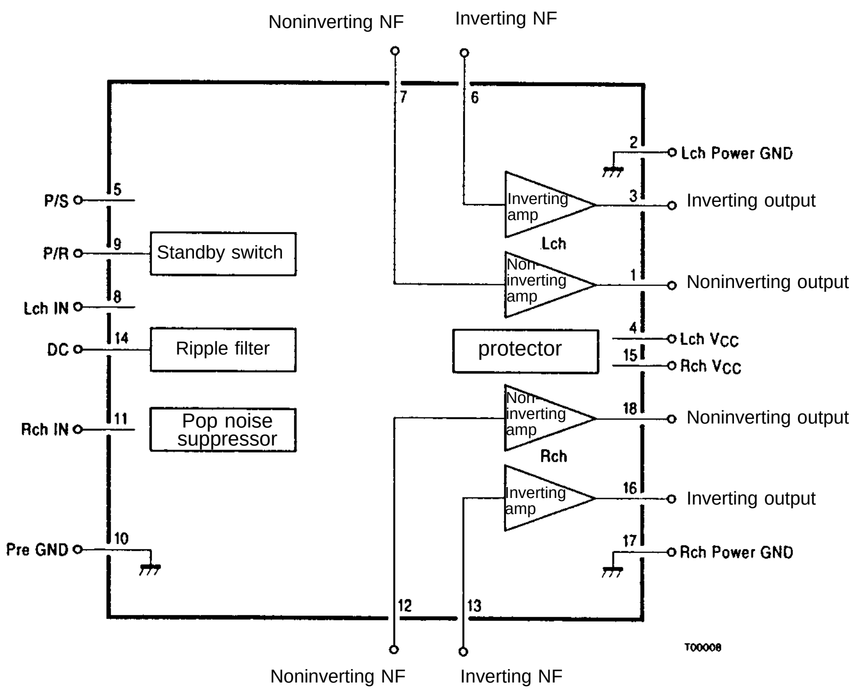
*Note: Use flat head screws for attaching heat sink with tightening torque 39 to 59 N•cm.

Operating Characteristics at Ta = 25°C, V_{CC} = 13.2 V, R_L = 4 Ω, f = 1 kHz, Rg = 600 Ω, See specified Test Circuit

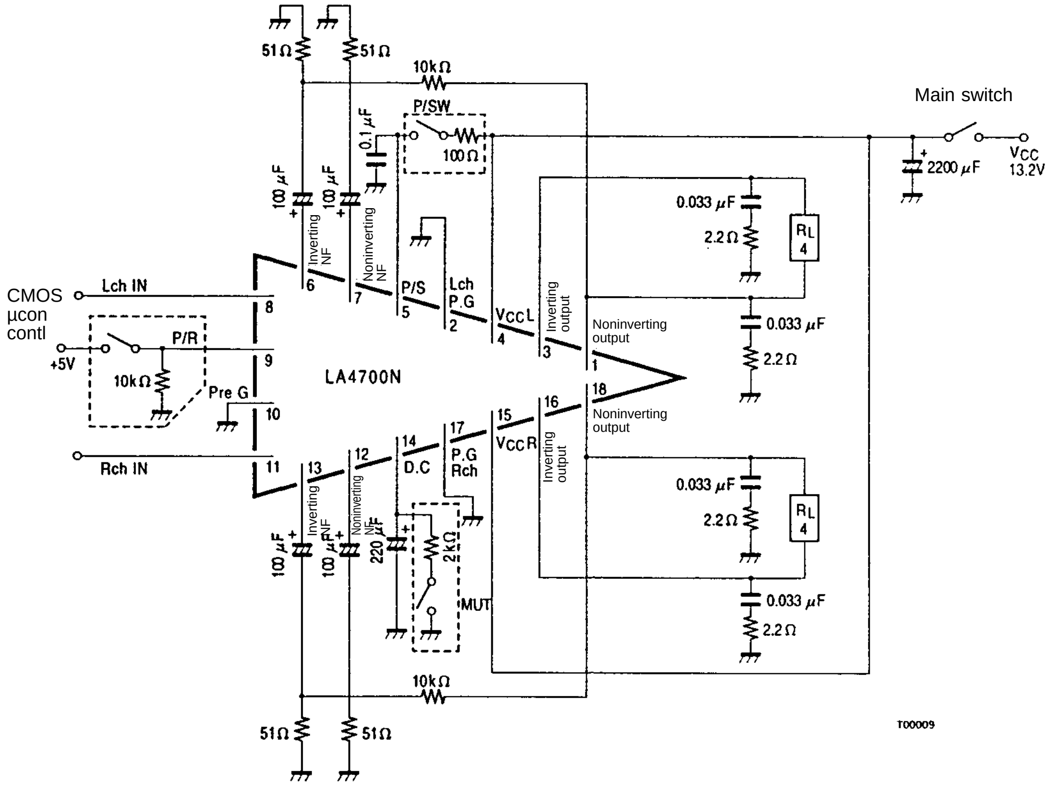
Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	Icco		60	140	200	mA
Voltage gain	VG		48	50	52	dB
Voltage gain difference	ΔVG				2	dB
Total harmonic distortion	THD	Po = 1 W		0.15	0.75	%
Output voltage	Po	THD = 10%	10	12		W
Output noise voltage	V_{NO}	Rg = 0, B.P.F. = 20 Hz to 20 kHz		0.2	0.4	mV
Ripple rejection	SVRR	Vr = 0 dBm, f_R = 100 Hz, Rg = 0	40	55		dB
Channel separation	CHsep	Po = 1 W, Rg = 10 kΩ	50	60		dB
Standby current	1st			10	100	μA
Offset voltage	Voff		–300		300	mV



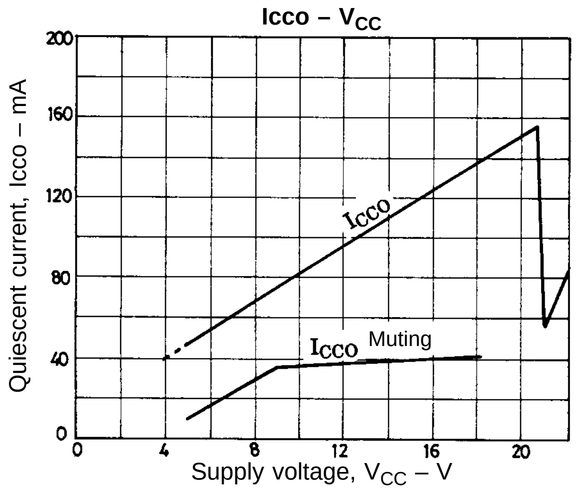
Equivalent Circuit Block Diagram

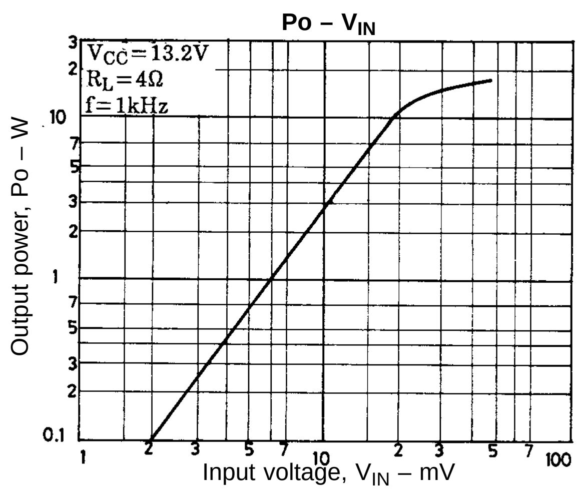


Sample Application Circuit

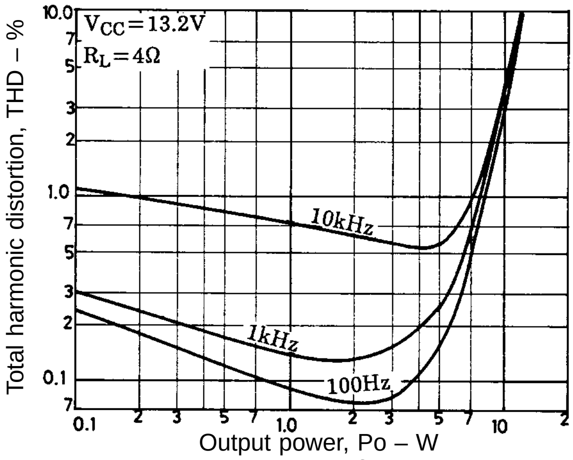


* Connect the portion bounded by a dotted line according to your intended applications.
When the power relay is not used, connect pin ⑨ to GND. In this case, the power switch is used to turn ON/OFF the LA4700N or the main switch is used to turn ON/OFF the LA4700N.

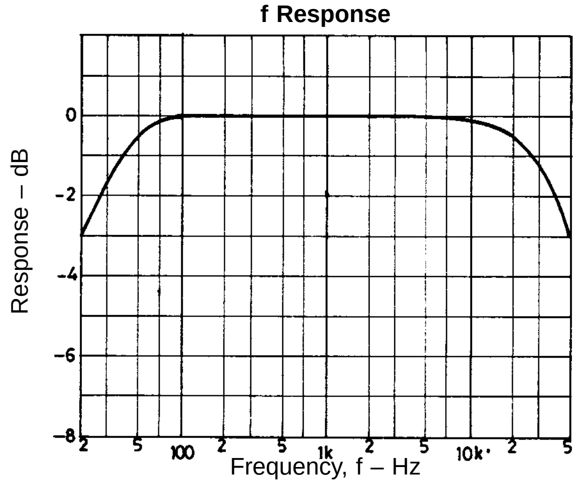




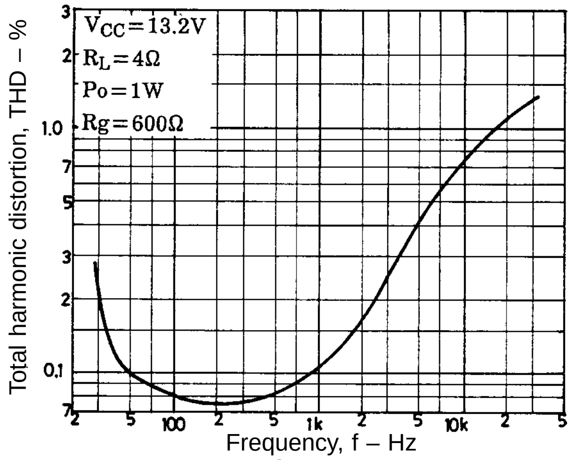
THD – Po



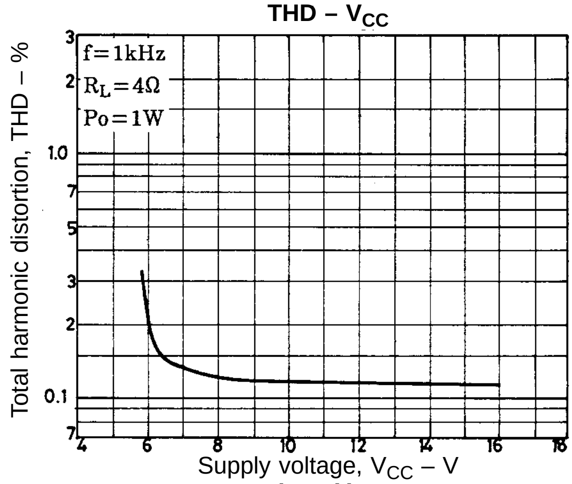
f Response



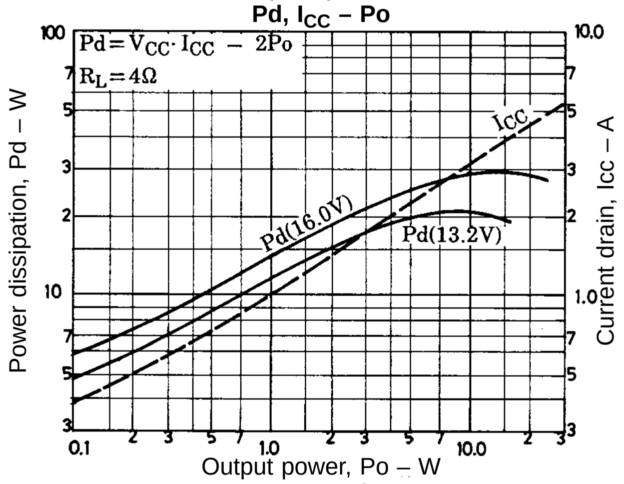
THD – f



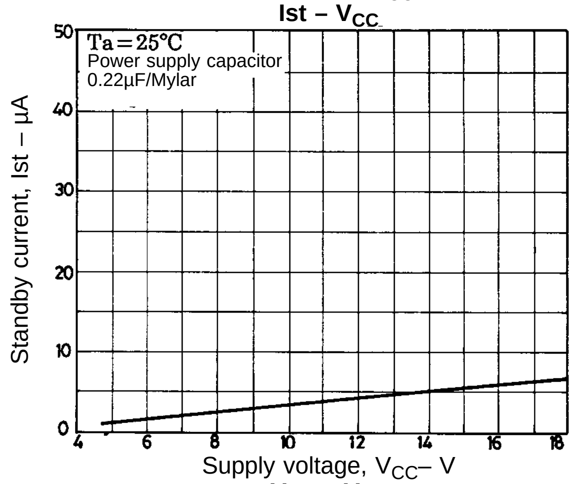
THD – V_{CC}



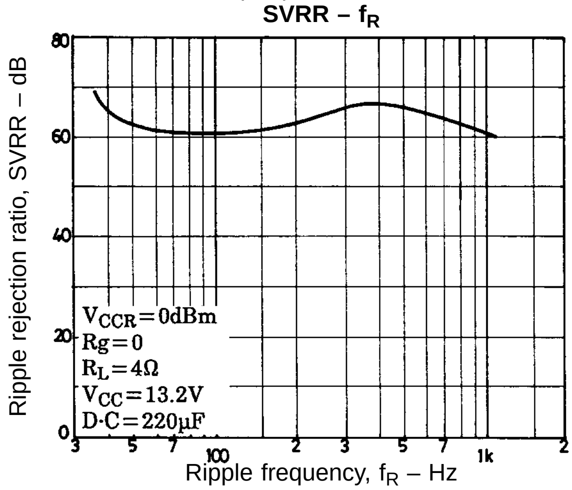
Pd, I_{CC} – Po



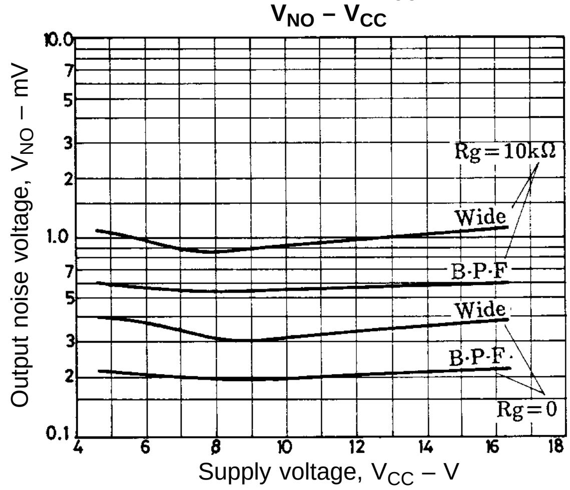
Ist – V_{CC}



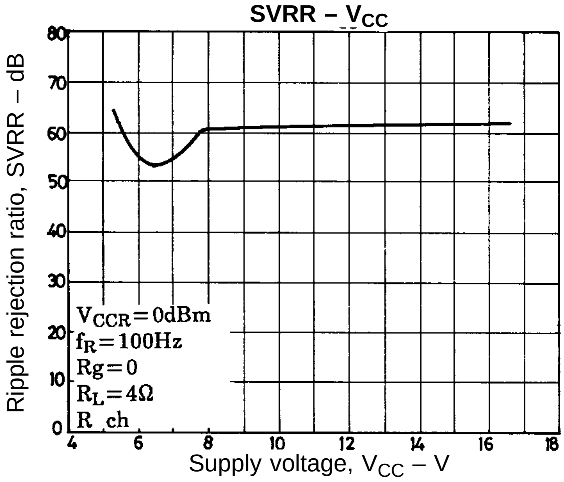
SVRR – f_R



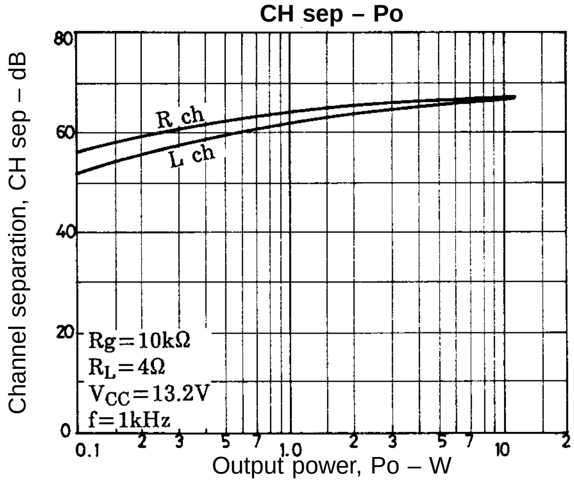
V_{NO} – V_{CC}



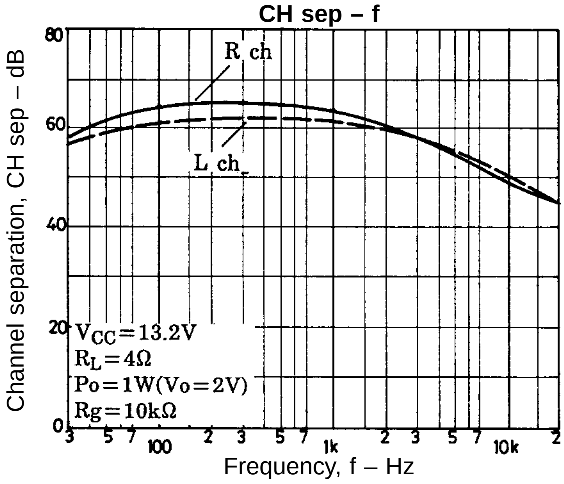
SVRR – V_{CC}

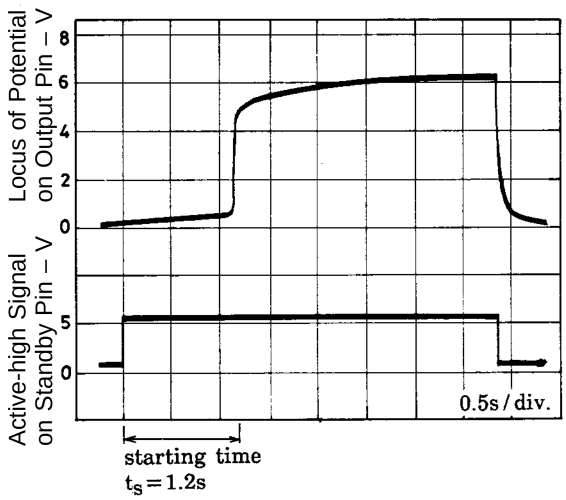


CH sep – Po



CH sep – f





To shorten t_S in the application herein, the filter capacitor (pin 14) value 220 µF is decreased. Filter capacitor value 100 µF gives t_S of 0.6 to 0.7 second.

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